

Epileptogenic domain estimation program

Real-time EZ determination from intermittent EEG!

Overview

Traditionally, a specialist determines the epileptogenic area (EZ) to be removed during epilepsy surgery by comprehensively judging the results of EEG, CT and MRI, SPECT and PET. Conventional methods are challenged by (1) low accuracy, (2) the length of the examination period (which requires at least one week), and (3) the high burden on the patient (two surgeries, the installation of an electroencephalograph and the removal of EZ).

The present invention can estimate the seizure origin (SOZ) and EZ with high accuracy and speed without waiting for an epileptic seizure by analyzing the high-frequency electroencephalogram during the interictal period. Specifically, since EZ can be precisely determined in about 30 minutes after the installation of the electroencephalograph (electrode), it is theoretically possible to determine and remove EZ in a single operation, greatly reducing the patient's burden.

It is expected that real-time EEG analysis software based on the present invention will be developed and implemented in EEG equipped with the software.

Product Application

- EEG Analysis Software (Epilepsy)
- EEG

IP Data

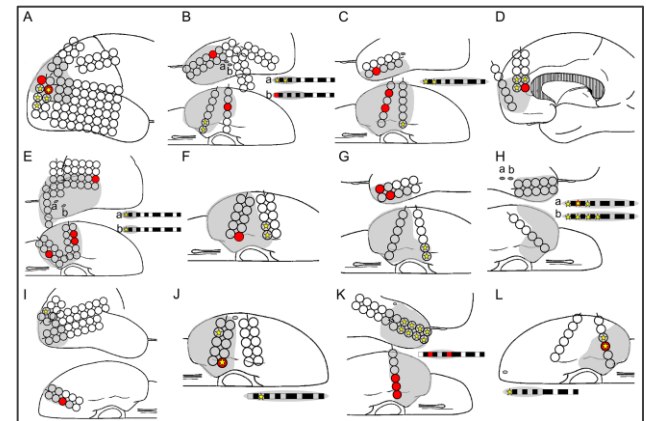
IP No. : JP2022-135348
Inventor : Mitsugu Uematsu
Admin No. : T21-359

Accurate EZ determination!!

Gray areas are the actual extent of resection

★ electrode of the seizure focus estimated from conventional ictal EEG

● electrode of the seizure focus estimated by using the present invention



Related Works

- [1] Uematsu et al. *Front Neurol.*2021.724417
- [2] Uematsu Japan Foundation for Epilepsy Research 2017; 28: 97 -104

Contact

Tohoku Techno Arch Co., Ltd.

Please visit [CONTACT](#) here